

What Is Claimed Is:

1. A laser diode module comprising:
  - a laser diode;
  - an optical system including an optical fiber and a lens portion, said optical system being configured to receive and transmit a beam emitted from said laser diode through said lens portion to said optical fiber;
  - a base configured to support said laser diode and at least a portion of said optical system; and
  - a bottom plate configured to support said laser diode, said optical system, and said base,

wherein a portion of said base is made of a material having a first thermal expansion coefficient and said bottom plate is constructed of a material having a second thermal expansion coefficient, and

wherein said first thermal expansion coefficient is substantially equal to said second thermal expansion coefficient.
2. The laser diode module according to Claim 1, wherein said portion of said base and said bottom plate are made of a same material.
3. The laser diode module according to Claim 1, wherein said portion of said base is coupled to said bottom plate via a temperature control device.
4. The laser diode module according to Claim 3, wherein said temperature control device is a thermo module, said thermo module comprising a first plate member attached to said portion of said base, a peltier element attached to said first plate member, and a second plate member attached to said peltier element and said bottom plate.

5. The laser diode module according to Claim 4, wherein said first plate member is made of a material having a first thermal expansion coefficient and said second plate member is constructed of a material having a second thermal expansion coefficient, and wherein said first thermal expansion coefficient is substantially equal to said second thermal expansion coefficient.

6. The laser diode module according to Claim 4, wherein said first plate member and said second plate member are made of a same material.

7. The laser diode module according to Claim 1, wherein said base comprises an optical system mounting member configured to support said optical fiber, and wherein said portion of said base is a laser diode mounting member configured to support said laser diode, said optical system mounting member being attached to said laser diode mounting member.

8. The laser diode module according to Claim 7, wherein said optical system mounting member is formed of an Fe-Ni-Co alloy.

9. The laser diode module according to Claim 1, wherein said lens portion has a fiber lens formed on said optical fiber, and wherein a tip end side of said fiber lens and a light emitting facet of said laser diode are arranged to oppose each other.

10. The laser diode module according to Claim 9, wherein said fiber lens is an anamorphic lens.

11. The laser diode module according to Claim 1, wherein said bottom plate is a part of a package configured to accommodate said laser diode.

12. A semiconductor laser diode module comprising:  
a laser diode;

an optical system including an optical fiber and a lens portion, said optical system being configured to receive and transmit a beam emitted from said laser diode through said lens portion to said optical fiber;

a fastening means for supporting at least a portion of said optical system;

a base configured to support said fastening means and said laser diode, said base includes a laser diode mounting member and a fastening means mounting member, said laser diode mounting member having a laser diode mounting region configured to mount said laser diode, said fastening means mounting member being mounted to said laser diode mounting member at a position other than said laser diode mounting region; and

a bottom plate configured to support said laser diode, said optical system, said fastening means, and said base,

wherein said bottom plate is made of material having a linear expansion coefficient that substantially equal to a linear expansion coefficient of said laser diode mounting member.

13. The semiconductor laser diode module according to Claim 12, further comprising a thermo module including a first plate member attached to said laser diode mounting member, a peltier element attached to said first plate member, and a second plate member attached to said peltier element and said bottom plate; and

a package for accommodating therein said laser diode, said optical system, said fastening means, said base and said thermo module.

14. The semiconductor laser diode module according to Claim 12, wherein said base projects in a direction parallel to an optical axis of said optical system from an end portion on an optical fiber mounting side of said thermo module.

15. The semiconductor laser diode module according to Claim 14, wherein said fastening means mounting member projects in a direction parallel to said optical axis from an end portion on an optical fiber mounting side of said laser diode mounting member.

16. The semiconductor laser diode module according to Claim 15, wherein said laser diode mounting member has a reinforcement portion configured to mechanically reinforce said fastening means mounting member located in a closest position to said laser diode, and wherein said reinforcement portion has a lower surface that is out of contact with said thermo module.

17. The semiconductor laser diode module according to Claim 12, wherein said lens portion has a fiber lens formed on said optical fiber, and wherein a tip end side of said fiber lens and a light emitting facet of said laser diode are arranged to oppose each other.

18. The semiconductor laser diode module according to Claim 17, wherein said fiber lens is an anamorphic lens.

19. The semiconductor laser diode module according to Claim 12, wherein said fastening means is formed of an Fe-Ni-Co alloy.

20. The semiconductor laser diode module according to Claim 12, wherein said fastening means mounting member is formed of an Fe-Ni-Co alloy.